ecology and environment, inc.
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International Specialists in the Environment

MEMORANDUM

TO: Mike Zimmerman, OSC
EPA/ERB - Denver

FROM: Robert Eddy
TAT - Region VIII

DATE: March 28, 1991

SUBJECT: Trip Report and Analytical Results of the Ground Water Sampling of 3 Wells at Richardson Flats Tailings, Summit County, Utah; TDD #T08-9101-025; PAN #EUT0039SAA

INTRODUCTION

This report has been prepared in fulfillment of the requirements of TDD #T08-9101-025. The Ecology and Environment, Inc., Technical Assistance Team (E & E TAT) was tasked by the Region VIII U.S. Environmental Protection Agency Emergency Response Branch (EPA/ERB) to provide metals analysis of four residential wells in the area of Richardson Flats which is located about one mile east of Prospector Square in Park City, Utah.

The sampling effort occurred on March 7, 1991, beginning at approximately 1000 hours. Personnel in attendance included Mike Zimmerman, OSC (EPA/ERB), Bob O'Brien, Utah Department of Health (UDOH), Robert Swenson, Summit County Health Department Sanitation, and Robert Eddy, Region VIII TAT. All sampling was conducted by Robert Eddy of the TAT assisted by Robert O'Brien of UDOH.

The original scope of the project was designed to collect samples of unpurged water from residential wells down gradient of the tailings to determine whether or not a release of metals had occurred or was occurring to the ground water in this location. Another suite of samples was scheduled to be collected after at least 3 casing volumes had been purged from each well. The analysis requested QA-II level objectives.

In actuality samples were collected from 3 downgradient industrial wells located northeast of State Highway 40 and directly north of the Richardson Flats Tailings because there no residential wells within a mile downgradient of the site. The wells sampled were all in excess of 300 feet in depth and used primarily for industrial purposes. During

this sampling effort the TAT also collected other information pertinent to the preparation of this report. At each location water temperature, pH, and conductivity was obtained, along with a description of the location, purge volumes, and the time at which each sample was collected. One duplicate, a triplicate (for spiking purposes), and a rinsate blank were also collected for QA/QC purposes. See Table 2 for further details concerning sample tag numbers, bottle lot numbers and chains-of-custody.

All samples were shipped on the same day using chain-of-custody procedures as specified in the Technical Assistance Team Standard Operating Procedures (TAT SOP) for Sampling. These samples were shipped to Silver Valley Labs in Kellogg, Idaho, for next day delivery under Federal Express Airbill #8750936821.

2.0 SITE DESCRIPTION

The Richardson Flats Tailings site lies within the northwest quarter of Section 1 and the northeast quarter of Section 2, Township 2 South, Range 4 East, Salt Lake Meridian, in Summit County, Utah. The tailings cover an area of approximately 160 acres on a topographic depression located one and one half miles northeast of the town of Park City.

The mill tailings at Richardson Flats were produced from mining operations conducted at the Keetley Ontario Mine and other metal mining operations currently owned by United Park City Mines (UPCM). The area was last used for tailings disposal from 1975 to 1981. In May 1974, the UDOH - Water Pollution Committee approved plans by Park City Ventures (who had leased the properties from UPCM) to construct an embankment, dikes and a diversion ditch to contain mill tailings disposed on Richardson Flats.

The E&E TAT has not performed any work at this site prior to this sampling effort.

3.0 SAMPLING PROCEDURES

Sampling activities consisted of one day of ground water sampling conducted at three locations approximately one half mile north of the Richardson Flats Tailings site.

Due to the nature of the wells sampled and the lack of specific information, certain pertinent data (i.e. well depth, casing diameter, height of the water column, pumping level, and total depth of the wells) the TAT was unable to adhere to ground water sampling protocols by calculating exact purge volumes. In order to assure some adherence to the protocols specified in the Region VIII TAT SOP for sampling the TAT assumed that each borehole was ten inches and each water column was 100 feet in height.

All water samples were screened using an HNu. During the purging of each well measurement of pH, conductivity, and temperature were recorded.

All samples were collected directly into the prescribed 1 liter poly containers obtained from the US EPA bottle repository and the bottle lot numbers were recorded in the site logbook. All filtered samples were then filtered later on completion of all the sampling activities using a Geotech peristaltic geopump with disposable 0.45 micron filters which eliminated the requirement for decontamination of sampling equipment after each sample had been filtered.

The first sample RF-MW-1, was collected at the Utah Power and Light facility at Silver Creek Junction. No data on the depth of this well or the height of its water column was available. Four types of samples were collected at this location: 1) unpurged filtered, 2) unpurged unfiltered, 3) purged unfiltered and 4) a purged filtered. Samples were immediately put into a cooler containing ice and cooled to 4°C. The unpurged samples were collected after allowing the tap to run for about 5 minutes, since the TAT was unable to determine the amount of piping between the well- head and the faucet. The tap was allowed for a total of 19.5 minutes before the purged samples were collected.

The second sample, RF-DW-2 was collected from the Geneva Rock aggregate plant, which is located about 150 yards northeast of the Utah Power and Light facility. After a conversation with the plant supervisor, the TAT was able to calculate a purge volume of 3298 gallons would be necessary to comply with the 3 casing volume requirement. However, in order to activate the pump to obtain fresh well water it was necessary to remove about 5000 gallons from the holding tank. The well was then purged and the sample collected. This was the only site where the sample was actually collected at the wellhead. A duplicate sample, RF-MW-5, was also collected at this location for QA/QC purposes.

RF-MW-3 was obtained from the Monroc facility located just south of the Geneva Rock plant. Special measures had to be taken at this site since there was no opportunity to collect the sample at the wellhead. In order to obtain a sample from the well, the TAT member had to climb atop the facility water storage tank and rig the float system to activate the pump. Due to the cramped nature of this operation and the fact that there was nowhere to allow the purge water to flow to, the OSC opted not to collect purged samples.

The samples were shipped via Federal Express next day on the afternoon of March 7, 1991, to Silver Valley Lab in Kellogg, Idaho.

4.0 FIELD OBSERVATIONS

As previously mentioned, problems encountered included the following:

- No specific details on well construction were available. Thus the TAT member on site asked that pumps be allowed to run for approximately 20

minutes or in the case of Geneva Rock until 3,298 gallons had been purged before collecting the purged samples.

- The wells sampled were in constant use so that the water in the casing/borehole could not be considered truly unpurged or standing water.

- One sample (purged, filtered) RF-DW-2 was not collected at Geneva Rock due to a lack of water in the borehole.

- Site observations of the ground were not noted because of an overnight snow fall.

- None of the samples were collected at the actual wellhead because of the in-place plumbing.

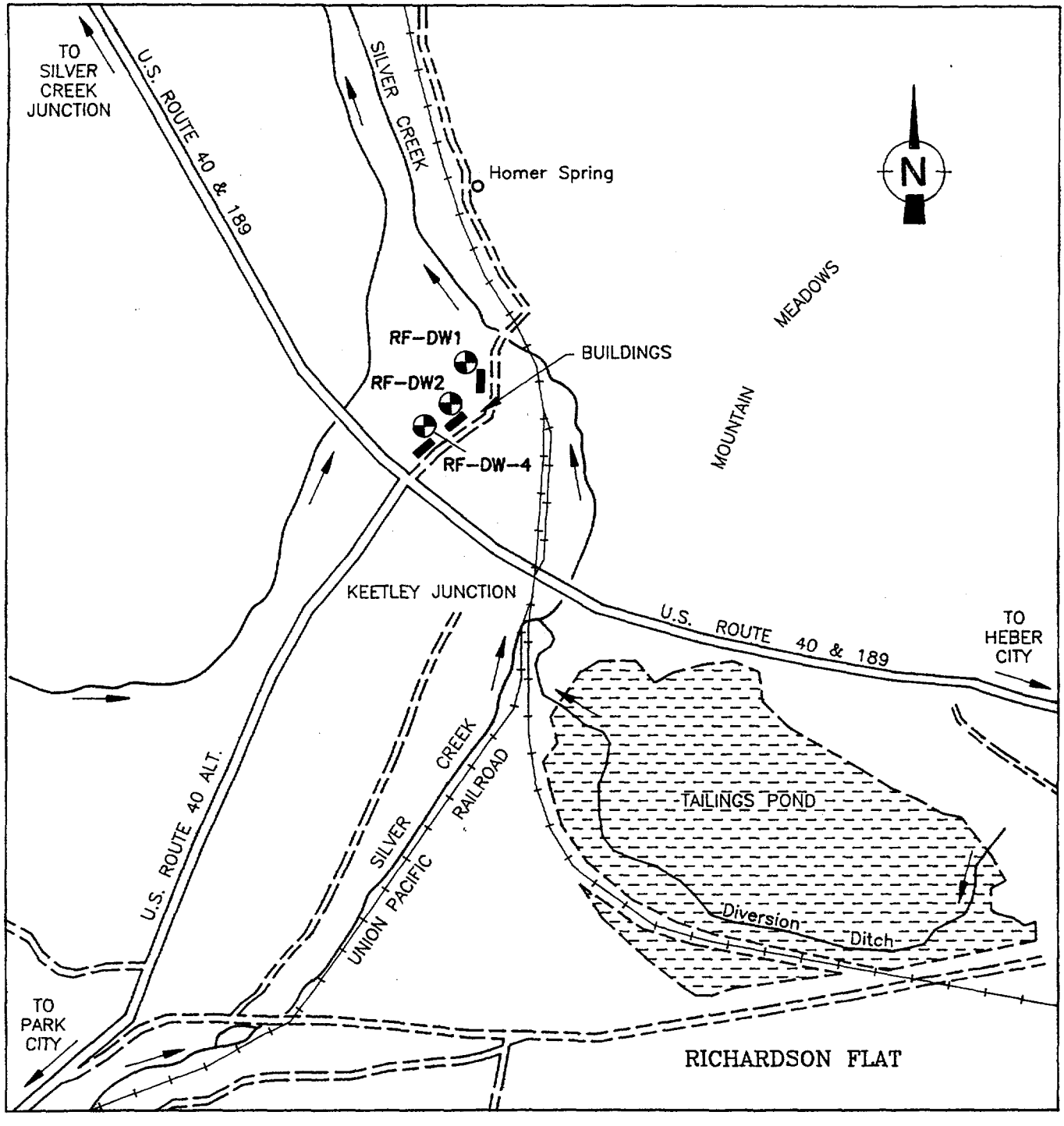
- None of the wells were used as potable water supplies. All three wells were used strictly for industrial purposes.

5.0 DISCUSSION OF ANALYTICAL RESULTS

A total of 14 samples from 3 wells were taken on March 7, 1991. Based upon the results obtained from the lab, no arsenic was detected suspended or dissolved in the water samples from any of the three wells. The same statement applies for cadmium and chromium. However, the results for lead indicate concentrations of 36 ppb (parts per billion) and 5.20 ppb in samples taken from RF-DW-5 and its duplicate RF-DW-2, respectively. These results are unusual for two reasons: 1) RF-DW-5 is a duplicate of RF-DW-2 and 2) the sample with higher lead concentration (RF-DW-5) does not correspond with the same unpurged and unfiltered sample from RF-DW-2. Since RF-DW-5 was taken as a lab QA/QC check, it may be assumed that there were problems duplicating the results.

TABLE 1
RICHARDSON FLATS
TDD #T08-9101-025

Sample #	Sample Tag Number	Bottle Number	Chain of Custody Number
RF-DW-1			
Unpurged unfiltered	8-20080	0068043	8-13227
Unpurged filtered	8-20082	0068043	8-13227
Purged unfiltered	8-20079	0068043	8-13227
Purged filtered	8-20081	0068043	8-13227
RF-DW-2			
Unpurged unfiltered	8-20083	0068043	8-13227
Purged unfiltered	8-20084	0068043	8-13227
Purged filtered	8-20086	0068043	8-13227
RF-DW-4 (Triplicate)			
Unpurged unfiltered	8-20091	0068043	8-13227
	8-20095	0068043	8-13227
	8-20096	0068043	8-13227
Unpurged filtered	8-20093	0068043	8-13227
RF-DW-5 (Duplicate of RF-DW-2)			
Unpurged unfiltered	8-18998	0068043	8-13227
Unpurged filtered	8-18980	0068043	8-13227
Purged unfiltered	8-18979	0068043	8-13227
Purged filtered	8-18981	0068043	8-13227
RF-BL-1			
Unpurged filtered	8-20087	0068043	8-13226



0 1/2 1 MILE

0 1000 2000 3000 4000 FEET

LEGEND

Industrial well sampled

TECHNICAL ASSISTANCE TEAM FOR EMERGENCY RESPONSE, REMOVAL AND PREVENTION
EPA CONTRACT 68-WO-0037

TITLE:

RICHARDSON FLAT
Park City, Utah
SAMPLE LOCATION MAP

T.D.D. T08-9101-025

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DENVER, COLORADO

FIG. 1

Date: 04/91 Drawn by: RSM Scale:

OFFICIAL PHOTOGRAPH
ENVIRONMENTAL PROTECTION AGENCY

Subject: A panoramic view of the site with water and fencing in foreground.
Location: Richardson Flats Tailings

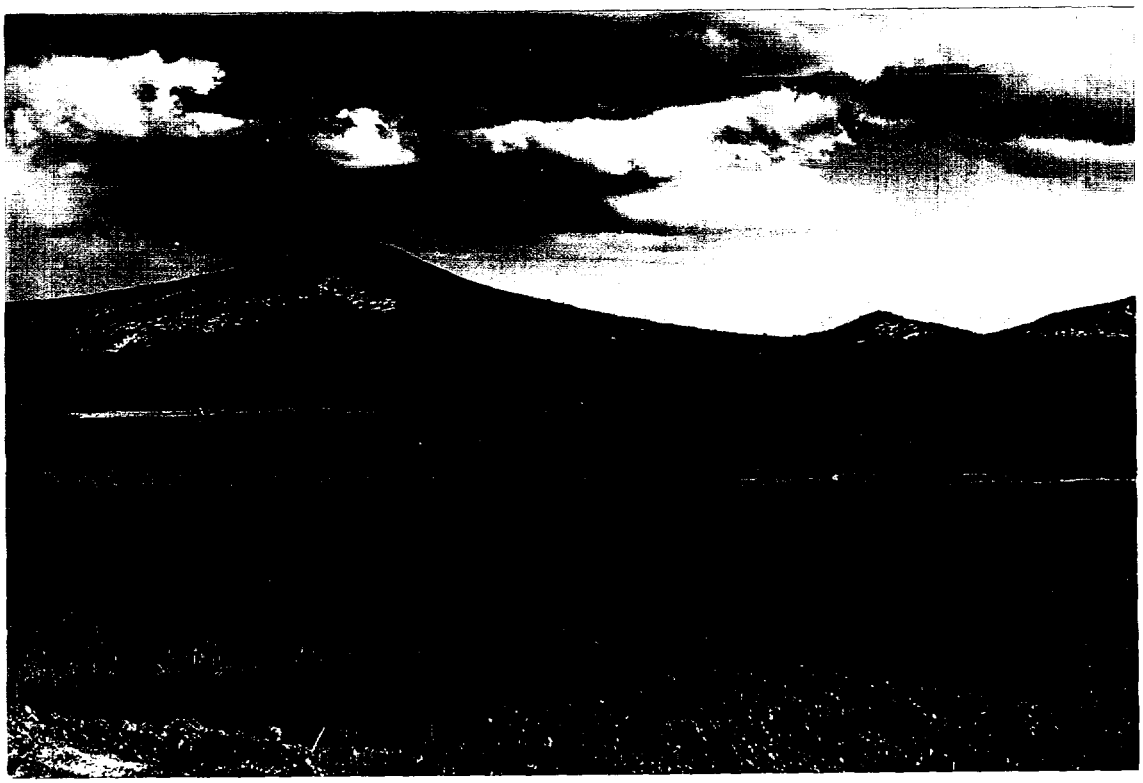
City: Park City County: Summit State: UT
Date: April 15, 1990 Time: Hours
Photographer: Robert Eddy
Film: Motophoto ASA: 100 Location of Negative: EPA-ERB
File: TDD #T08-9101-025
Witness:
Process: Kodak Colorwatch System
Paper: Kodak

OFFICIAL PHOTOGRAPH
ENVIRONMENTAL PROTECTION AGENCY

Subject: View looking south of the eastern boundary of the site.

Location: Richardson Flats Tailings

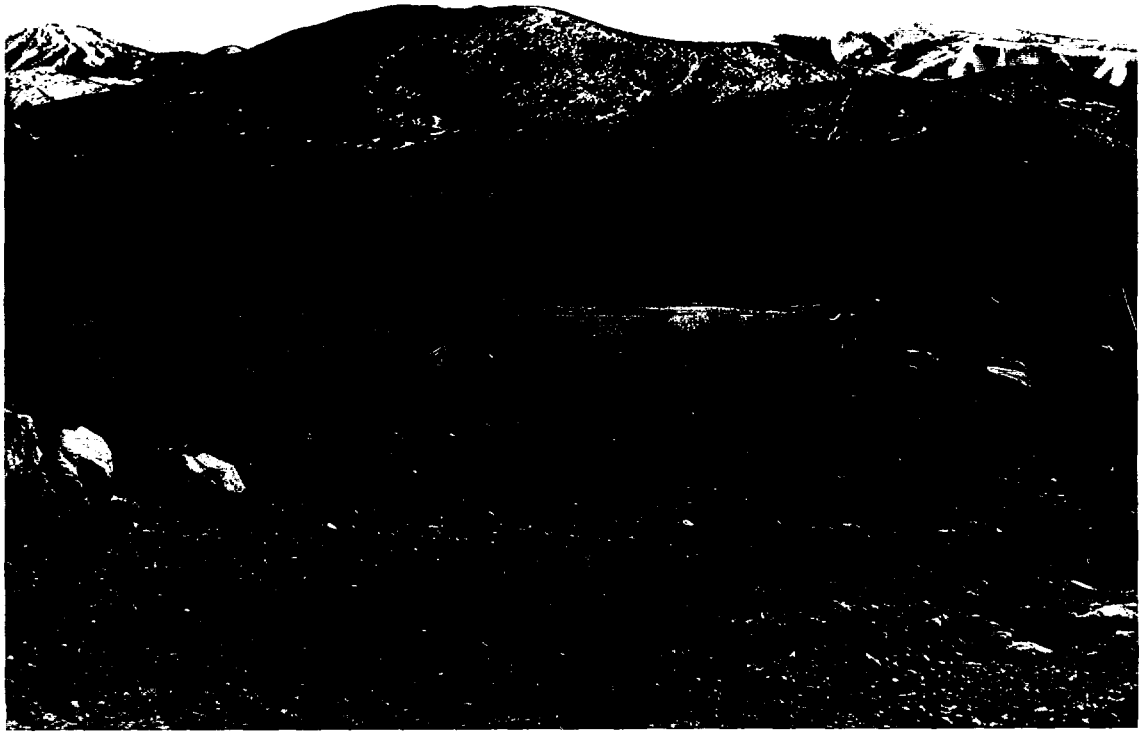
City: Park City County: Summit State: UT
Date: April 15, 1990 Time: 1600 Hours
Photographer: Robert Eddy
Film: Motophoto ASA: 100 Location of Negative: EPA-ERB
File: TDD #T08-9101-025
Witness:
Process: Kodak Colorwatch System
Paper: Kodak



OFFICIAL PHOTOGRAPH
ENVIRONMENTAL PROTECTION AGENCY

Subject: Photo looking west of the north end of the tailings site. Highway 40 is in the background.
Location: Richardson Flats Tailings

City: Park City County: Summit State: UT
Date: April 15, 1990 Time: 1600 Hours
Photographer: Robert Eddy
Film: Motophoto ASA: 100 Location of Negative: EPA-ERB
File: TDD #T08-9101-025
Witness:
Process: Kodak Colorwatch System
Paper: Kodak



OFFICIAL PHOTOGRAPH
ENVIRONMENTAL PROTECTION AGENCY

Subject: Photo looking west showing the lack of security for the site.

Location: Richardson Flats Tailings

City: Park City County: Summit State: UT
Date: April 15, 1990 Time: Hours
Photographer: Robert Eddy
Film: Motophoto ASA: 100 Location of Negative: EPA-ERB
File: TDD #T08-9101-025
Witness:
Process: Kodak Colorwatch System
Paper: Kodak

OFFICIAL PHOTOGRAPH
ENVIRONMENTAL PROTECTION AGENCY

Subject: A view looking south of where the tailings dike encounters the road.
Location: Richardson Flats Tailings

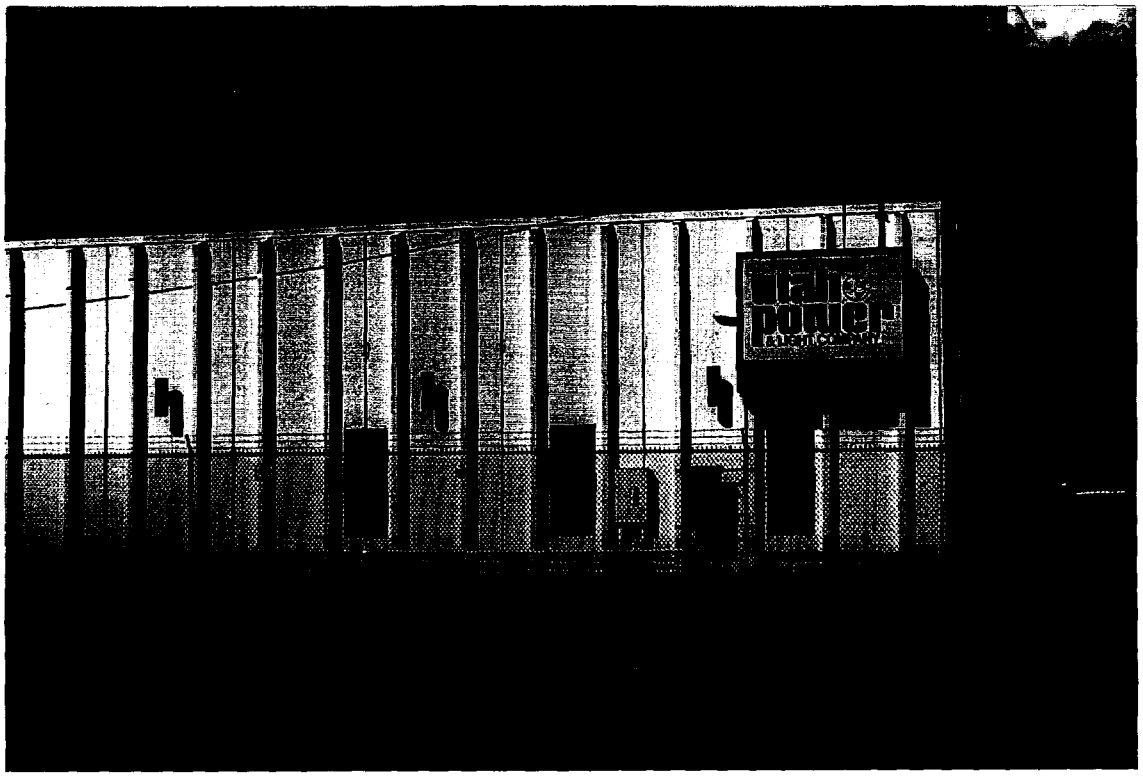
City: Park City County: Summit State: UT
Date: April 15, 1990 Time: Hours
Photographer: Robert Eddy
Film: Motophoto ASA: 100 Location of Negative: EPA-ERB
File: TDD #T08-9101-025
Witness:
Process: Kodak Colorwatch System
Paper: Kodak

OFFICIAL PHOTOGRAPH
ENVIRONMENTAL PROTECTION AGENCY

Subject: A view further west of the same dike in Photo #5.

Location: Richardson Flats Tailings

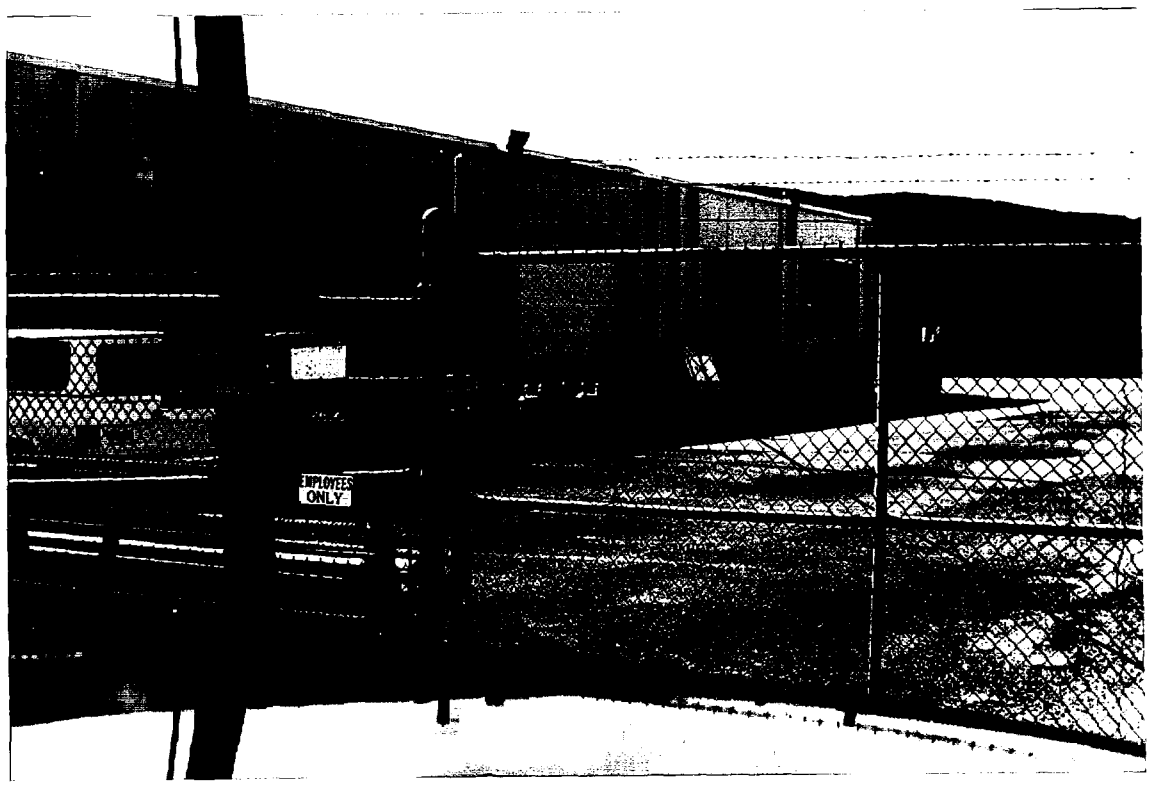
City: Park City County: Summit State: UT
Date: April 15, 1990 Time: Hours
Photographer: Robert Eddy
Film: Motophoto ASA: 100 Location of Negative: EPA-ERB
File: TDD #T08-9101-025
Witness:
Process: Kodak Colorwatch System
Paper: Kodak



OFFICIAL PHOTOGRAPH
ENVIRONMENTAL PROTECTION AGENCY

Subject: Utah Power and Light facility site of the RF-DW-1 at Silver Creek Junction.
Location: Richardson Flats Tailings

City: Park City County: Summit State: UT
Date: April 15, 1990 Time: Hours
Photographer: Robert Eddy
Film: Motophoto ASA: 100 Location of Negative: EPA-ERB
File: TDD #T08-9101-025
Witness:
Process: Kodak Colorwatch System
Paper: Kodak



OFFICIAL PHOTOGRAPH
ENVIRONMENTAL PROTECTION AGENCY

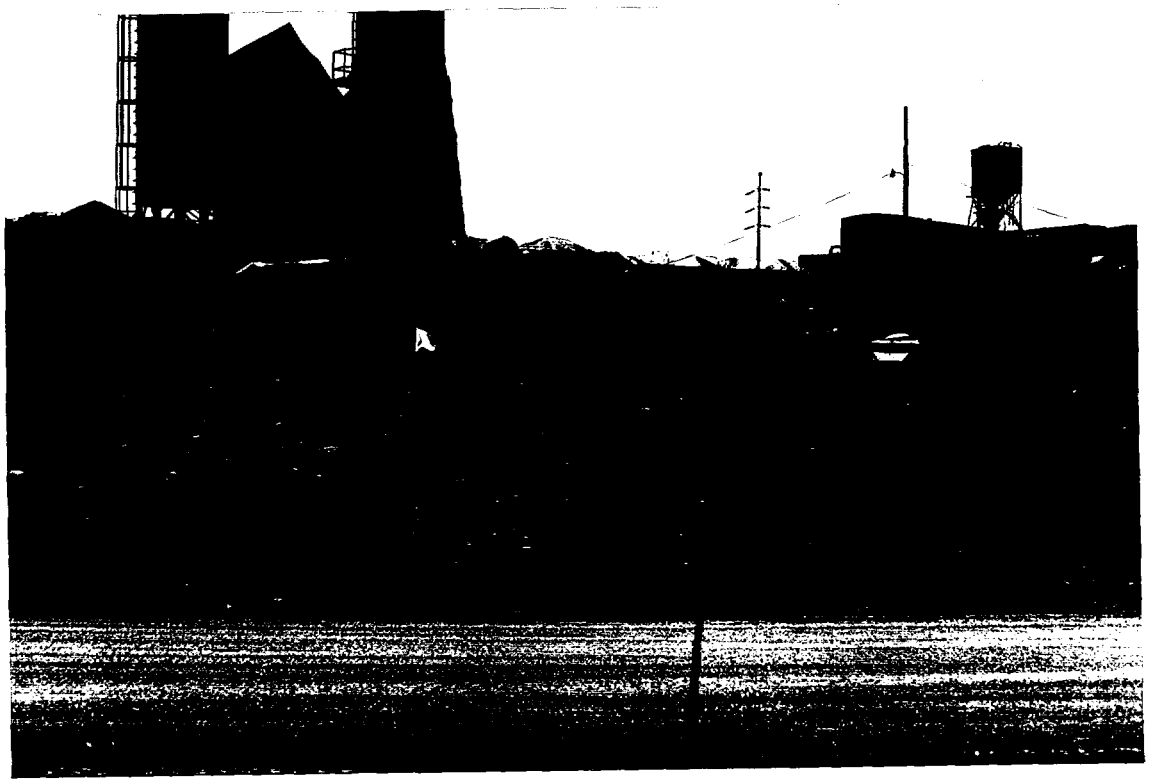
Subject: Photo of the east side of the building where the water sample was collected.
Location: Richardson Flats Tailings

City: Park City County: Summit State: UT
Date: April 15, 1990 Time: Hours
Photographer: Robert Eddy
Film: Motophoto ASA: 100 Location of Negative: EPA-ERB
File: TDD #T08-9101-025
Witness:
Process: Kodak Colorwatch System
Paper: Kodak

OFFICIAL PHOTOGRAPH
ENVIRONMENTAL PROTECTION AGENCY

Subject: A view looking north at the Geneva Rock facility where RF-DW-2 was collected.
Location: Richardson Flats Tailings

City: Park City County: Summit State: UT
Date: April 15, 1990 Time: Hours
Photographer: Robert Eddy
Film: Motophoto ASA: 100 Location of Negative: EPA-ERB
File: TDD #T08-9101-025
Witness:
Process: Kodak Colorwatch System
Paper: Kodak



OFFICIAL PHOTOGRAPH
ENVIRONMENTAL PROTECTION AGENCY

Subject: A view looking west at the Monroe facility where RF-DW-24 was collected.
Location: Richardson Flats Tailings

City: Park City County: Summit State: UT
Date: April 15, 1990 Time: 1615 Hours
Photographer: Robert Eddy
Film: Motophoto ASA: 100 Location of Negative: EPA-ERB
File: TDD #T08-9101-025
Witness:
Process: Kodak Colorwatch System
Paper: Kodak

OFFICIAL PHOTOGRAPH
ENVIRONMENTAL PROTECTION AGENCY

Subject: A close view looking north of the Geneva Rock facility.

Location: Richardson Flats Tailings

City: Park City County: Summit State: UT
Date: April 15, 1990 Time: 1620 Hours
Photographer: Robert Eddy
Film: Motophoto ASA: 100 Location of Negative: EPA-ERB
File: TDD #T08-9101-025
Witness:
Process: Kodak Colorwatch System
Paper: Kodak

APPENDIX A

Analytical Data

ecology and environment, inc.

1776 SOUTH JACKSON STREET, DENVER, COLORADO 80210, TEL. 303-757-4984

International Specialists in the Environment

MEMORANDUM

TO: Mike Zimmerman, OSC
EPA/ERB - Denver

FROM: Kent Alexander
TAT - Region VIII

DATE: March 20, 1991

SUBJECT: Data Results for Richardson Flats; TDD #T08-9102-001

This memorandum was written to satisfy the requirements of Technical Direction Document (TDD) #T08-9102-001 issued to the Ecology and Environment, Inc., Technical Assistance Team by the Region VIII Environmental Protection Agency Emergency Response Branch (EPA/ERB).

Please find attached the data results from the water sampling at the Richardson Flats site in Park City, Utah. The results have not received a QA/QC review. If you would like a review to be performed, please let me know so that it will receive a priority assignment.

The results may be found in the attached table or in the raw data at the end. Samples RF-DW-2 and RF-DW-5 are field duplicates. A blank sample was also taken.

The following qualifiers were attached to the sample results by the laboratory:

B - The sample result was above the IDL but below the CRDL.
U - The element was analyzed for but not detected.
W - The furnace post digestion spike was out of range.

TABLE 1

INORGANIC SAMPLE RESULTS (ug/L)

RICHARDSON FLATS

TDD #T08-9102-001

Sample Location	RF-DW-1	RF-DW-1	RF-DW-1	RF-DW-1	RF-DW-2	RF-DW-2	RF-DW-2
Sample Tag #	8-20079	8-20080	8-20081	8-20082	8-20083	8-20084	8-20086
Lab ID #	WA6954	WA6955	WA6956	WA6957	WA6958	WA6959	WA6960
Date	03/07/91	03/07/91	03/07/91	03/07/91	03/07/91	03/07/91	03/07/91
Time	1039	1039	1039	1039	1200	1200	1200
Purged	Yes	No	Yes	No	No	Yes	Yes
Filtered	No	No	Yes	Yes	No	No	Yes
Arsenic	3.00 UW	3.00 UW	3.00 UW	3.00 UW	3.00 UW	3.00 UW	3.00 UW
Cadmium	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U
Chromium	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Lead	5.90	1.00 B	1.00 U	1.00 U	1.10 B	5.20	1.00 UW

Sample Location	RF-DW-4	RF-DW-4	RF-DW-5	RF-DW-5	RF-DW-5	RF-DW-5	RF-BL-1
Sample Tag #	8-20091	8-20093	8-18978	8-18979	8-18980	8-18981	8-20087
Lab ID #	WA6962	WA6963	WA6950	WA6951	WA6952	WA6953	WA6961
Date	03/07/91	03/07/91	03/07/91	03/07/91	03/07/91	03/07/91	03/07/91
Time	1224	1224	1300	1300	1300	1300	1420
Purged	No	No	No	Yes	No	Yes	No
Filtered	No	Yes	No	No	Yes	Yes	No
Arsenic	4.80 B	3.00 U	3.80 B	3.00 UW	3.00 UW	3.00 UW	3.00 U
Cadmium	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U
Chromium	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Lead	1.00 U	1.60 B	36.9	1.40 B	1.90 B	2.80 B	1.00 U

- CLP

EPA SAMPLE NO.

8

1
INORGANIC ANALYSIS DATA SHEET

Lab Name: SILVER VALLEY LABS.,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: JOB154

Matrix (soil/water): WATER Lab Sample ID: WA6950

Level (low/med): Date Received: 3/08/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.80	B		F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	3.00	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium	5.00	U		P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	36.90			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT # 8-48978

SF [illegible] FILE NO. 10

INORGANIC ANALYSIS DATA SHEET

Lab Name: SILVER VALLEY LABS.,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: JOB154

Matrix (soil/water): WATER Lab Sample ID: WA6952

Level (low/med): Date Received: 3/08/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.00	U	W	F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	3.00	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium	5.00	U		P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	1.90	B		F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT # 8-18980.

U.S. EPA - CLP

EPA SAMPLE NO.

12

1

INORGANIC ANALYSIS DATA SHEET

Lab Name: SILVER VALLEY LABS.,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: JOB154

Matrix (soil/water): WATER Lab Sample ID: WA6954

Level (low/med): Date Received: 3/08/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.00	U	W	F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	3.00	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium	5.00	U		P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	5.90			F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT # 8-20079.

SAMPLE NO. 14

INORGANIC ANALYSIS DATA SHEET

Lab Name: SILVER VALLEY LABS.,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: JOB154

Matrix (soil/water): WATER Lab Sample ID: WA6956

Level (low/med): Date Received: 3/08/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.00	U	W	F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	3.00	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium	5.00	U		P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	1.00	U		F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT # 8-20081.

EPA SAMPLE NO.

16

1

INORGANIC ANALYSIS DATA SHEET

Lab Name: SILVER VALLEY LABS.,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: JOB154

Matrix (soil/water): WATER Lab Sample ID: WA6958

Level (low/med): Date Received: 3/08/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.00	U	W	F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	3.00	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium	5.00	U		P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	1.10	B		F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT # 8-20083.

EPA SAMPLE NO.

18

INORGANIC ANALYSIS DATA SHEET

Lab Name: SILVER VALLEY LABS.,INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: JOB154

Matrix (soil/water): WATER Lab Sample ID: WA6960

Level (low/med): Date Received: 3/08/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	3.00	U	W	F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	3.00	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium	5.00	U		P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	1.00	U	W	F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT # 8-20086.

EPA

EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

80

Lab Name: SILVER VALLEY LABS., INC. Contract:

Lab Code: Case No.: SAS No.: SDG No.: JOB154

Matrix (soil/water): WATER Lab Sample ID: WA6962

Level (low/med): Date Received: 3/08/91

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				NR
7440-36-0	Antimony				NR
7440-38-2	Arsenic	4.80	B		F
7440-39-3	Barium				NR
7440-41-7	Beryllium				NR
7440-43-9	Cadmium	3.00	U		P
7440-70-2	Calcium				NR
7440-47-3	Chromium	5.00	U		P
7440-48-4	Cobalt				NR
7440-50-8	Copper				NR
7439-89-6	Iron				NR
7439-92-1	Lead	1.00	U		F
7439-95-4	Magnesium				NR
7439-96-5	Manganese				NR
7439-97-6	Mercury				NR
7440-02-0	Nickel				NR
7440-09-7	Potassium				NR
7782-49-2	Selenium				NR
7440-22-4	Silver				NR
7440-23-5	Sodium				NR
7440-28-0	Thallium				NR
7440-62-2	Vanadium				NR
7440-66-6	Zinc				NR
	Cyanide				NR

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:
CLIENT # 8-20091.

APPENDIX B

Logbook

TABLE OF CONTENTS

Date Log Open: 01/28/91

TDD #: TOS-9101-025

~~PAN:~~ EUT 0039 SAA

Site Name: RICHARDSON FLATS

Site Location:

~~TDD Project Officer:~~ ROBERT EDDY

EPA Point of Contact: MIKE ZIMMERMAN

General Work: SAMPLE 5 HOUSES FOR METALS ANALYSIS ON WATER

Specific Tasks:

Team Members: ROBERT EDDY, LINDA WARRICK.

TDD Deadlines:

TOS- 9101-025.

02/12/91

1250 Spoke w/ Mike Zmuda about a schedule for sampling Richardson Flats. He wanted to know when TAT could accomplish this task. I suggested the week of the 25th of Feb or late this week. He says no because he would have to check with the state (Bob O'Brien) and on the 28th due to the lack of personnel at ERB he couldn't then. We decided to try for the week of the 7th March 1991.

RA.

02/13/91 T08-9101 - 025

1358 Spoke w/ Mike Zimmerman about sampling Richardson flats on ~~The~~ Re March 7, 1991. He says that date has been confirmed w/ the State and County health.

- TAT should provide sample bottles for the State (all parameters)
- Meet 1000 hours at Colville, probably 4 residences. To sample, along with a duplicate.

1405 I told Tom Smith about this schedule.

Re

02/15/91 T08-9001-025.

1402 Spoke w/ Kent Alexader to ensure that the lab could deliver analytical results ~~by that~~ on time since we would have only 24 days until the report was due. //

1405 Kent checked the requirements this is for a five-day turnaround

6

03/01/91 TOS-9101-025

0842 Called Mike Zimmerman about the exact number of containers required since his letter to the County Health sanitarian mentioned collecting purged and unpurged samples from the domestic wells which would double the number of containers. Mike said he realized this and to check with Kent Alexander on whether or not there was enough money budgeted for analytical services.

1100 Called the OSC (MZ) to find out whether he still wanted TAT to provide sample containers to the state. He said he would call me back w/ the answer.

1315 Returned Mike Zimmerman call. He said that the state would provide their own containers. The OSC would be out of town until he flees into Salt Lake on Wednesday afternoon but he will contact me on Monday afternoon of Tuesday morning.

RE

03/06/91 T08-9101-025

ct number- 1442 Called Kent Alexander in Denver about whether to preserve unfiltered samples with HNO_3, etc. says yes, preserve all samples.

tioned 2220 Worked on preparing papers work 1.5 hours.

from

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Kent

was

services.

whether

he

would

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afternoon

afternoon

RE.

03/01/91 TOB-9101-025

0958 Arrive at Truck Stop off I-80 to meet w/ Robert Swenson Summit County Health Sanitarian. 1.

1002 Arrive at Quinn Junction Utah Power and Light facility to collect a water sample from fire hydrant in the Garage area RF-DW-1 1

1012 Calibrated instruments

Cond: 380 w/ 400 µmhos sol. EPA # 647618

2500 w/ 3750 " Sol.

1039 Sample collected at DW-1

1107 Proceeded to Geneva Rock plant (~~MONROE~~ RE) To sample the well onsite which is not used for domestic purposes. Purged volumes would require 9885 gallons to be removed before it can be called true aquifer water 1. 1. 1.

1200 Approximately 11000 gallons purged from the well Geneva Rock facility sample was then collected for purged volume equates to 1 1/2 times the casing volume. 14: 17

1224 Sampled the well at Monroe for Triplicate of unfiltered un-purged, no purged sample collected because of closed system that would require the removal of 10,000 gallons of water. 1830

RE

TOS-9101-025

1245 TATM Eddy accompanied by the OSC and Bob O'Brien (UDOH) proceed south to the actual tailings site.

1302 The area around the actual tailings is wet from the overnight snows. The fencing around the site is in a ~~flag~~ state of extreme disrepair near the road and especially near the bridge over what I assume to be Silver Creek. TAT took photographs of the fence.

1325 Stopped in Park City to buy Lunch.

1402 Arrived back at UDOH and dropped off OSC and Bob O'Brien.

1435 Returned to Petrochem site to filtered and preserve samples taken at Richardson Flats.

1715 Completed preparation and packaging of samples to be delivered to the lab.

1830 Returned to Petrochem after shipping samples via Fed Ex and turning in the vehicles

RE

Lab Assignment:

10-15 water samples
incl. 1 dup
1 blank
As, Pb, Cd, Cr analysis
5 day turnaround

Silver Valley Lab
1 Government Gulch
Kellogg, ID 83837
(208) 784-1258
Dave Slater

SAMPLE #: RF-DW-1

RESIDENCE: UTAH POWER & LIGHT QUINN'S JUNCTION FACILITY

TIME: ~~1015~~ RE 1039

pH: 7.0 (pH paper used)

CONDUCTIVITY 1800 μmhos

TEMPERATURE: 5°C

SAMPLE APPEARANCE: Taken from fire hydrant. Clear no fines or sediment. Purged water for 10 minutes

PARAMETERS	SAMPLE TAG NO.	TRAFFIC REPORT NO.	BOTTLE LOT NO.	CHAIN OF CUSTODY NO.	AIRBILL NO.
METALS (PURGED)	8-20079 ✓	UNFIL (PURG)	0068043	8-132287 RE	
METALS (UNPURGED)	8-20080 ✓	UNFIL	0068043	8-132297 RE	
METALS (PURGED)	8-20081 ✓	FILTERED	0068043	8-132267 RE	
METALS (UNPURGED)	8-20082 ✓	FILTERED	0068043	8-132267 RE	

SAMPLE #: RF-DW-2 (DUPLICATE OF RF-DW-5)

RESIDENCE: GENEVA ROCK PLANT

Sample not purged because it would required 9684 gallons to be removed before sampling.

h = 300' r = .66'

TIME: ~~1115~~ 1200 hrs

pH: 8.0

CONDUCTIVITY: 550 μmhos

TEMPERTURE: 10 °C

SAMPLE APPEARANCE: clear.

	PARAMETERS	SAMPLE TAG NO.	TRACOR RECEIPT NO.	BOTTLE LOT NO.	CHAIN OF CUSTODY NO.	AGRILL NO.
*	METALS (UNPURGED)	8-20083	EW FILTERED		8-13223	
	METALS (PURGED)	8-20084	EH FILTERED		8-13223	
*	METALS (UNPURGED)	8-20085	FILTERED	not enough water not taken	8-13224	
	METALS (PURGED)	8-20086	FILTERED		8-13224	

SAMPLE #: RF -DW-3

RESIDENCE:

NOT TAKEN

TIME:

pH:

CONDUCTIVITY:

TEMPERATURE:

SAMPLE APPEARANCE:

PARAMETERS	SAMPLE TAG NO.	TRANSFER TECHNIQUE	BOTTLE	CHAIN OF CUSTODY	AIRBILL NO.
METALS (UNPURGED)	8-20087	UNFILTERED		~~8-13225~~ RR	
METALS (PURGED)	8-20088	UNFILTERED		~~8-13225~~ RR	
METALS (UNPURGED)	8-20089	FILTERED		~~8-13226~~ RR	
METALS (PURGED)	8-20090	FILTERED		~~8-13226~~ RR	

SAMPLE #: RF - DW - 4 (TRIPLICATE)

RESIDENCE: MONROE 355-9699 Kent 4.1 ug LT.

No purged samples collected at this location because there was no way to bypass water going into an already full holding tank.

TIME: 1224

pH: 7.0

CONDUCTIVITY: 650 μmhos.

TEMPERATURE: 10°C

SAMPLE APPEARANCE:

PARAMETERS	SAMPLE NO.	FILTERED / UNFILTERED	BOTTLE TYPE	CHAIN OF CUSTODY NO.	AIRBILL NO.
METALS (UNPURGED)	8-20091	UNFILTERED		8-13225	
~~METALS (PURGED)~~	~~8-20092~~	~~UNFILTERED~~		~~8-13225~~	
METALS (UNPURGED)	8-20093	FILTERED		8-13226	
~~METALS (PURGED)~~	~~8-20094~~	~~FILTERED~~		~~8-13226~~	
METALS (UNPURGED)	8-20095	UNFILTERED		8-13225	
METALS (UNPURGED)	8-20096	UNFILTERED		8-13225	

SAMPLE #: RF-DW-5 (DUPLICATE OF RF-DW-2)

RESIDENCE:

TIME: 1300

pH: Same as RF-DW-2

CONDUCTIVITY: n

TEMPERATURE: n

SAMPLE APPEARANCE: n

PARAMETERS	SAMPLE ORG NO.	[illegible]	[illegible]	[illegible]	[illegible] NO.
METALS (UNPURGED)	8-18978 ✓	UNFILTERED		8-1322[illegible] 7RR	
METALS (PURGED)	8-18979 ✓	UNFILTERED		8-1322[illegible] 7RR	
METALS (UNPURGED)	8-18980 ✓	FILTERED		8-1322[illegible] 7RR	
METALS (PURGED)	8-18981 ✓	FILTERED		8-1322[illegible] 7RR	

U.S. ENVIRONMENTAL PROTECTION AGENCY
Environmental Services Division

CHAIN OF CUSTODY RECORD

REGION VIII, ONE DENVER PLACE
999 18TH STREET
DENVER, CO. 80202-2413

PROJ. NO.	PROJECT NAME
T08-9010-025	ELIT 0039 SAA

SAMPLERS: *(Signature)* Robert L Goldy

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 LITER POLY	2.5-GALLON TAG #	REMARKS
RF-DW-1	03/07/91	1039		✓		4		8-20079, 8-20080, 8-20081, 8-20082	
RF-DW-2	03/07/91	1300		✓		3		8-20083, 8-20084, 8-20086	
RF-DW-4	03/07/91	1224		✓		4		8-20091 (LIP, LIF); 8-20093 (LIF, F); 8-20095 (LIP, LIF); 8-20096 (LIP, NF)	
RF-DW-5	03/07/91	1300		✓		4		8-18978 (LIF, LIP); 8-18979 (LIF, P); 8-18980 (LIP, ~~LIF~~); 8-18981 (F F)	
RF-BL-1	03/07/91	1420		✓		1		8-20087	

Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
Robert L Goldy	03/07/91 1730	FED EX			
Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date/Time	Received for Laboratory by: *(Signature)*	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

R8 EPA-014B

8-13227

EPA REGION VIII
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OPERABLE UNIT _____

REPORT OR DOCUMENT TITLE Trip RPT & Analytical Results of ground water

DATE OF DOCUMENT March 28, 1991

DESCRIPTION OF IMAGERY Color Photos

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